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**"WHY DO WE NEED TO STUDY THIS?"
COMPUTER SIMULATIONS AS A BRIDGE BETWEEN
THEORY AND APPLICATION**

by

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Abstract: Computer assisted simulations provide experiential learning opportunities for the student of strategic management. Benefits and challenges related to simulation usage are discussed. Approaches to incorporating a simulation into the classroom are explored.

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DISCUSSION

In a recent "Arlo 'N' Janis" cartoon, an interviewer asked a job applicant, "So, you studied business in college?" The applicant responded with a hearty, "Oh, yes, Sir!" When the interviewer then asked what kind of business, the applicant responded with a blank stare. The interviewer concluded by saying, "That's ok, Kid--it was a trick question of sorts."

As an educator primarily in the business and strategic management areas, I frequently have encountered students who believe that the material, even if interesting, often has no "real world" significance for them. Yes, they learn lists and steps and components and do's and don'ts. But, why do they learn what they learn? Is it so that they can use those newly learned concepts in a setting other than the classroom, or is it only so that they can pass the exam?

Research indicates that the fundamentals of college education, teaching and testing, are falling short of their goal to produce the critical thinkers and problem solvers the United States will need in the future. It is estimated that a minimum of 60% of Americans will need to be able to think critically to successfully compete in today's technological age, as compared to about 10 percent 50 years ago (Kratz, 1991).

Darrell Jensen, dean of the South Dakota State University College of Education and Counseling, stresses that the traditional learning style associates learning and teaching with talking, which keeps the student from becoming involved enough in the learning.

"Students aren't being placed in a position where they must analyze," he said. "It's like we want to dump a whole truckload of facts in students' minds and see how many they remember (Kratz, 1991, p. 14)."

This paper focuses on the potential of making the classroom not one where traditional teaching methods emphasize theory over application, but rather one where theory and application are complements. A teaching methodology that can help direct students to be active, not passive learners is discussed. This methodology also has implications for responding to the question of how we as educators can present students with the opportunity to see first hand the relevance of what they're learning, and the importance of analysis. It can help convince students that taking responsibility for their own learning, while risk taking, is worthwhile. The teaching methodology to which I refer is simulation. Simulation is an interactive technique for providing the student with exposure to simulated "real world" situations. The computer, coupled with the simulation tool, presents new avenues for learning.

Computer simulations are not new; in fact, business management courses quite commonly use business "games" to expose students directly to the managerial decision making process. This, however, is generally done in a functional way (i.e., determining product price, marketing, etc.).

The primary value of this paper is the illustrated usefulness of the computer as a tool for students to experience the challenges and responsibilities of mid and upper level (business and corporate) competitive

strategy rather than at the conventional functional level. Generally, the mid and upper levels have been historically unbalanced in favor of theory at the expense of application. How can a student who is studying strategic decision making at the corporate level, for example, get a feel for what it is like to actually make those decisions? What CEO would say to a student, "Come sit in on our strategic planning session, and be sure to speak your mind." With the computer simulating real world conditions, however, the student can experience first hand long-term upper level strategic planning. They must deal not only with developing realistic mission statements, but also with such factors as competitors producing a similar product, liquidations, other industries, and remote and operating environmental elements. Not only do they learn about strategy, they learn about cause and effect, and are accountable for actions and decisions in a simulated high powered managerial setting.

STRATEGY! A BUSINESS UNIT SIMULATION

In a growing field of simulations, *Strategy! A Business Unit Simulation*,¹ is striving to gain a reputation as an entirely new concept in business simulation. Business policy and strategic management courses at the undergraduate and graduate levels constitute it's target market.

Strategy! is like other business simulations in that it is designed to simulate a competitive environment. Student teams are created that are responsible for the quarterly budget and operations of companies in an effort to outperform all other student teams. But that is just a start. Teams can also own several companies in any of ten different industries, receive a quarterly newsletter about environmental conditions, buy companies from other teams or sell its own companies.

It's a relatively new idea in simulations for students to have indepth involvement in strategic decision making in an upper level capacity. Working together in teams, students can choose to expand within a given industry or diversify into unrelated industries. They can decide to liquidate one or more of the companies they own and use the cash to create new companies. And all the while they must manage the operational and budgetary affairs of each company they own.

The simulation creates realistic conditions that permit the student to apply strategic management tools and concepts that are part of every strategic management course. One of it's strengths lies in the fact that although students work as a team, they also have individual responsibilities. Students operate as part of a team who manage a portfolio of companies. Each student within their respective team, however, takes on the role of Operations Manager, where they are responsible for controlling the performance of their own companies (strategic business units-SBU's) by managing advertising, research and development, and investment accounts. They learn that each account has a different effect on the competitive interaction between SBU's within the same industry. Simulation developer H. Richard Priesmeyer points out that it is entirely possible for a team to improve the performance of an SBU through good operational management even though an industry has been programmed to decline. Similarly, it is possible for a team to mismanage an

SBU such that it fails to grow within an expanding industry. Operations managers must monitor industry conditions by studying the environment and by tracking industry averages. SBU budget allocations must be adjusted accordingly. Students are therefore challenged to handle SBU operations efficiently and also to manage team portfolios with strategic effectiveness.

As a fringe benefit, the potential for enhancing leadership skills is significant. The student works within a management team, and must deal with resulting group dynamics. They are operations managers, yet answer to a CEO (also a student). Non-traditional or adult learners add yet another dimension by contributing experiences the traditional student has not had the opportunity to encounter.

EXPERIENTIAL LEARNING OPPORTUNITIES

Thomas F. Pray, an expert in computerized business simulations at Rochester Institute of Technology in New York contends that, "In a well-designed simulation, the winning team is almost always the team that uses a well-thought-out and well-implemented strategic plan. That includes knowing what the competition is doing, looking at cost-efficiency factors, assessing resource strengths and weaknesses, looking for opportunities in the market, [and] understanding and interpreting appropriate economic information (TDJ, 1989, p. 9)."

As a learning experience, it is interesting to note that those teams who do the "best" early on in such areas as securing large market shares and high portfolio worth are not necessarily as motivated to learn. In the words of Edward Strong, a professor at Tulane University, "Companies that are scratching, losing market share, and trying to survive, read all the studies, read the manual three times and learn like crazy. They pick up on what it takes to put together a winning plan (Maital & Morgan, 1988, p. 58)."

A former student put it this way. "It is easy to look back and to see the mistakes that I made by wrong or misinformed judgments. Each decision needs careful evaluation. You need to have an understanding of how each of the components effects the other. I found the simulation to be quite challenging and informative. I learned more in this simulation from my company not being as successful as anticipated. The reason for my belief is that it forced me to get the most from my decisions all of the time."

INCORPORATING THE SIMULATION INTO THE CLASSROOM

It is gratifying to encounter students who thoroughly enjoy embarking on a simulation experience. Simulations can satisfy desires for challenge, curiosity, control, and fantasy, which are hypothesized as being elements which foster motivation (Alessi & Trollip, 1991). It is important, however, to recognize and expect some resistance from the student whose educational background is centered on the traditional "talking, memorizing, regurgitating, forgetting" style of education (Kratz, 1991). It is human nature to resist change; the student used to the traditional learning style may resent other teaching approaches and complain that they aren't fair. Students are

generally perceived as being "classical" thinkers in that they want complete rationality; they think in terms of black and white, wanting complete information about the situation in a world full of free and complete information. Neither the real world nor the simulated one looks that way (Maital & Morgan, 1988). Additionally, our educational system has been set up on a competitive, not cooperative basis, so students may initially be quite uncomfortable with a cooperative group setting, and the expectation that they help others in their group instead of beat them.

Acknowledging some expected reluctance on the student's part to try something new, it is essential that the simulation be well explained. Provide ample time for clear and detailed explanation of the purpose and objectives of the simulation, including details on the program itself. Sit down at a computer with the students and walk through how the simulation program works. Explain how the simulation is related to the study of strategic management and why it is relevant. Provide ample time for a no risk "trial run". Go over the results of the "trial run" until participants seem comfortable with how the simulation works. It is crucial that the student be familiar with the software before the actual simulation begins. Otherwise, time that is allocated for strategic decision making will be wasted trying to figure out how to run the program. As the simulation progresses, reinforce the strategic management concepts being applied.

Simulations can be integrated into course curriculum in a number of ways. Typically it is used as a "live" case study paralleling the class periods. Students may be required to meet outside of class time and bring decisions to class, or a portion of class time may be used to make decisions. Some instructors may prefer to utilize the simulation as an intense "capstone" experience. Generally the final week or two is then devoted exclusively to the simulation.

My strategic management course is divided into two separate, yet interdependent halves. Of two sessions per week, one consists of a lecture series to discuss concepts of strategic management, pulling in timely and relevant illustrations of strategy at work in actual companies. The other session is held in a computer classroom where the simulation is run. The student is introduced to the purpose and objectives of the simulation. They are required to complete a take home quiz to test their understanding of the student manual which details how the simulation works. A review of this material is held, followed by a "trial run". Only after the results of the "trial run" have been discussed does the "actual" simulation begin. Students must complete a strategic plan for their simulation team that includes a mission statement, objectives and policies at a corporate and business level. As various strategic management concepts (i.e., mission, internal and external analysis, strategic forecasting, long term objectives and grand strategies) are discussed in a traditional classroom setting, they also are discussed as related to the simulation.

Evaluation criteria reflect student responsibility for both team and individual performance. I use three evaluation components - team performance, individual performance, and a final report. Since the essence of strategy is competition, it is realistic to include that factor in the grading, so the

team performance component is determined by both team rank and the quality of the strategic plan. Individual performance is determined by a return on asset tracking which compares the individual's management of their particular SBU with the industry average. Additionally, peer performance evaluations for operations managers and CEO's are completed. Finally, at the completion of the simulation, all teams are evaluated based upon a final report which details their performance and indicates in what ways the exercise was a learning experience.

CONCLUSION

Simulations are effective in demonstrating how the business disciplines, usually treated separately, are interconnected. Participants can test the effects of risk-taking without having to pay real-world consequences.

The ability to simulate ongoing competition among companies is perhaps the simulation's greatest strength (Maital & Morgan, 1988). It is in this arena that students are provided the opportunity to experience strategy at work, are actively involved in applying and implementing strategic concepts, and are held accountable for their strategic analysis and decisions.

NOTE

¹*Strategy! A Business Unit Simulation*, is a computer simulation developed by H. Richard Priesmeyer, Department of Management, James Madison University, and published by South-Western Publishing Company (1987). Both administrator and student need access to an IBM compatible computer to run the program.

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